



“Building a Better Community”

Sustainability Kickoff

2 March 2009

Presented by:

Colonel Robert D. Rice, USMC

Commanding Officer

Marine Corps Base

Hawaii



My Goals

- **Good stewardship of the taxpayer's dollar and the environment**
- **Self-sustaining energy generation by 2015**
- **Become a "Power Provider" to benefit the community and the Marine Corps**
- **Sustainment planning and execution becomes part of our daily life**

Marine Corps Base Hawaii pays \$23M annually for power!



Why?

- Marines are lean, GREEN, fighting machines
- Marines have been saving the planet for over 200 years
- Marines conserve; they hit their target with the first round
- Without nature, Marines would be visible
- Marines clean up on the battlefield



E3SC

- Environmental / Energy Executive Steering Committee
 - Created to examine enterprise-wide operations and suggest policy changes that will improve energy efficiency, energy conservation, and environmental stewardship
 - Membership at command level
 - Working groups at SME-level to research, develop, and implement proposals



Energy Program Initiatives

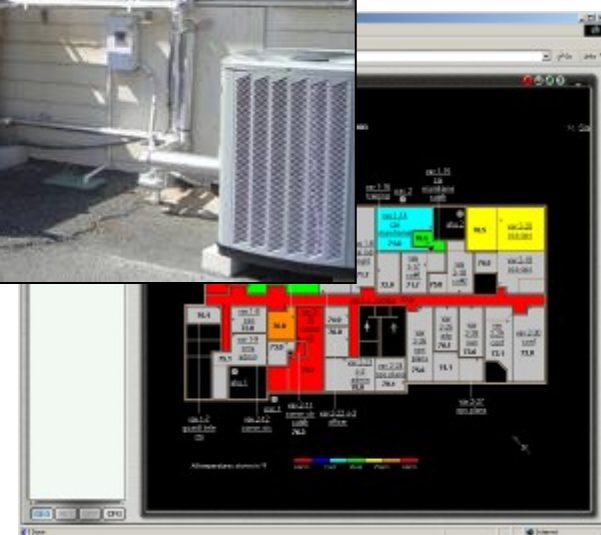
- Energy Savings Performance Contract
- Renewable Energy Projects
 - Solar hot water systems, lodging facilities
 - Barracks photovoltaic carports
 - Building-integrated photovoltaic roofing
- Sustainable design & construction – LEED Silver (Gold?) Barracks
- New energy efficient street light bulbs





Energy Program Initiatives

- Daylight harvesting, self-dimming electronic Ballasts
- “Ice Bear” hybrid A/C thermal ice storage system
- Air Conditioning & Lighting Controls for Managing Energy Use
 - 56 MCBH buildings are connected
 - Control Systems Accessible and monitored via the Internet





Energy Savings Performance Contract (ESPC)

- \$12.8m in facilities improvements between 2008 and 2009
 - Energy efficient lighting upgrades
 - Water conservation upgrades
 - Occupancy sensing A/C controls
 - A/C and controls upgrades
- Will reduce MCB Hawaii annual energy consumption by 5.9% (22,700 MBTU/yr)
- \$564 investment/MBTU annual savings
- Guaranteed average annual savings of \$1.3m/yr
- Project financed over 21 years



Planned Energy Initiatives

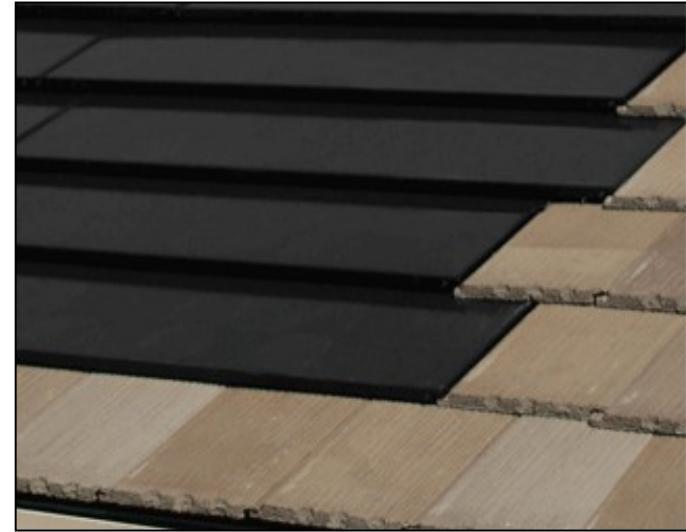
- **Distributed Generation Plant**
 - Multi-MW and multi-fuel capable
 - Owned / operated under a power purchase agreement (PPA)
- **Solar Array Field (FY10)**
 - Ground-mounted, crystalline PV cells, single axis rotation
 - Owned / operated under a PPA
- **New housing will have electricity use-monitoring**





Planned Energy Initiatives

- **Photovoltaic roof tiles proposed for new barracks (P-749 & P-750)**
- **Flexible photovoltaic panels, integrated with thermoplastic roofing, proposed for several flat roofs**
- **Runway light conversion**





Energy Research

- **Plastics-to-Fuel Conversion (PFC)**

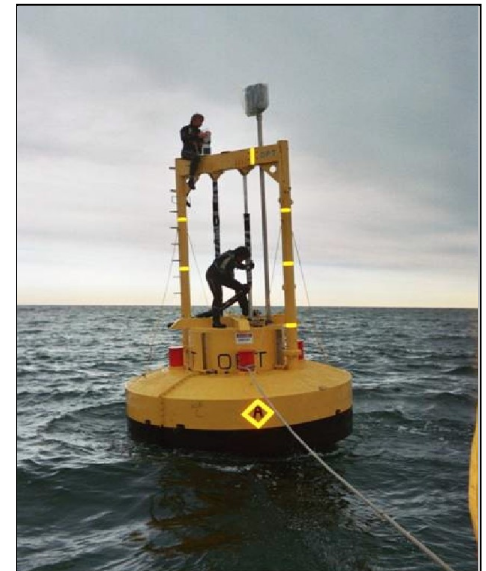
- Potentially convert 115 tons used plastics to 27,482 gallons diesel fuel annually
- Available for partnership



- **Wave Energy Technology (WET) Project, Buoy #3**

- **Ocean Thermal Energy Conversion (OTEC)**

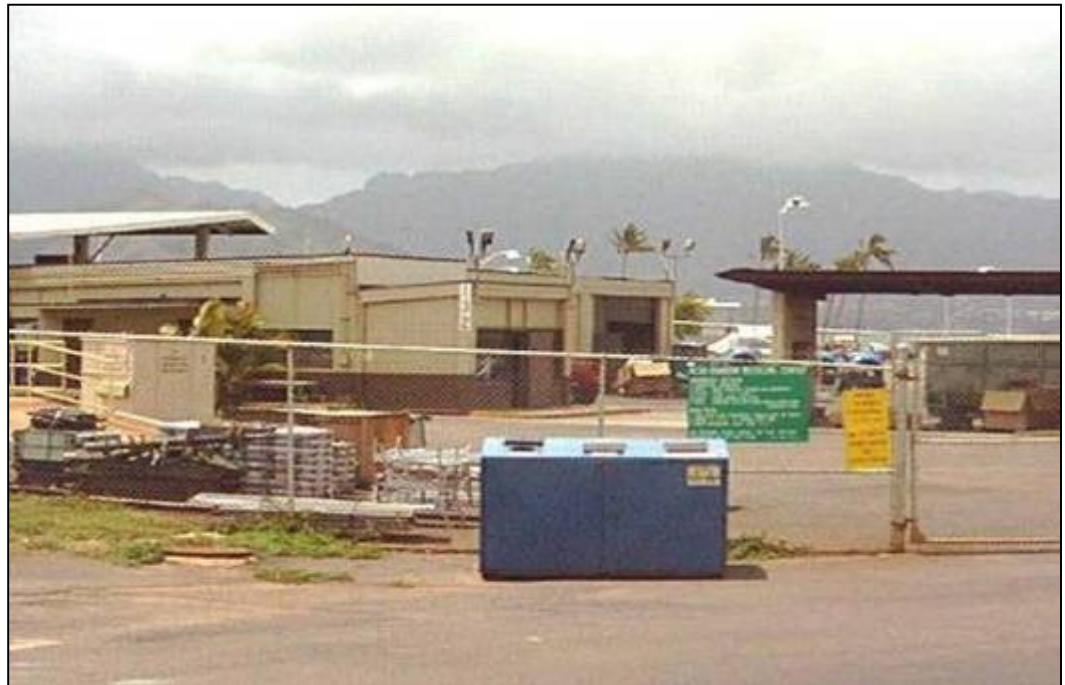
- Fledgling technology being examined internally





Recycle Center

- **Self-sustaining operation**
 - Recycling revenues used to; pay six employees, maintain and upgrade equipment, and educate base population
 - FY08: \$600K from brass, \$125K from 500 tons of recyclables
- **First to recycle mattresses on economy (over 1400 by end of March)**
- **Partnerships with USAF to recycle fiber products**





Family Housing Curbside Recycling Program



- **Reduce current trash pickup from twice-a-week to once-a-week**
- **Recycle pick-up replaces second trash pick-up**
- **First phase in base-managed housing to began February**
- **For PPV housing, Forest City anticipates start date of 7 April for first 400 homes**
- **In line with community initiative**



Sustainability Plan

- National Defense Center for Environmental Excellence (NDCEE) assisting base to create base-wide sustainability plan
 - Incorporate on-going sustainability initiatives, management systems, and existing programs
 - Linked to base strategic and master plans
 - Aligned with local, joint-military initiatives and the Hawaii 2050 Sustainability Plan
 - Will establish long- and short-term sustainability goals
 - Projected completion date: 2010



Environmental Partnerships



MCB Hawaii engages multiple government, non-government, and community organizations in partnerships that benefit the Base, the community and the environment.



Board of
Water
Supply





HazMin Center

- All hazardous materials coming on or leaving MCB Hawaii go through this center
- Procurement and waste-disposal dollars (estimated \$8 million since 1998) are saved through careful management of material
- Re-Use Room open to residents on base; prevents improper/unnecessary disposal and encourages re-use



Other Initiatives

- Plastic bag phase-out at point of sale
 - MCCS (Exchange) started 1 Jan, 2009
 - Partners working on plans to follow (Commissary, all vendors, etc.)
 - Fosters sustainable living and protects the maritime environment
 - Encourages use of re-useable bags



Other Initiatives

- Encourage use of CFL bulbs
- Limit availability of incandescent bulbs
 - MCCS, Commissary, Forest City and Barracks self-help





Conclusion

- MCB Hawaii will become a sustainable enterprise that conserves and preserves its resources in order to:
 - Accomplish our mission and train Marines/Sailors/Joint Forces
 - Be good stewards of the taxpayer's dollar and the environment
 - Do the right thing and Lead the way ahead!